309.1 - Impact Standards: Charpy V-Notch Specimens

These SRMs are test specimens intended primarily for the verification of Charpy testing machines. The dimensions of these SRMs comply with the current ASTM Standard E23 and the current ISO 148-1 Standard.

SRMs 2092, 2096, and 2098 are NIST-Verification Charpy V-notch specimens that have a post-test evaluation service and proficiency test data available with them. SRMs 2092 and 2096 are to be tested at -40 °C; SRM 2098 is to be tested at room temperature (21 °C). These SRMs should be impact tested (broken) consectively in the same time frame (*i.e.*, not on separate days). A completed questionnaire and digital pictures of the broken samples should be then emailed to NIST Boulder for evaluation. An acceptable machine will produce an average value within 1.4 J or 5 % of the certified energy value, whichever is greater.

SRMs 2093 and 2097 are Self-Verification Charpy V-notch specimens that do not have any post-test services available with them. These SRMs provide a lower cost option for the Self-Service user. SRMs 2093 and 2097 are to be tested at -40 °C. These SRMs are not returned to NIST Boulder for evaluation.

SRMs 2112 and 2113 are NIST-Verification Charpy V-notch specimens that are certified for absorbed energy at -40 °C and room temperature and for maximum force at room temperature. These SRMs provide a means to verify the performance of both the energy and force scales of an instrumented

Charpy impact machine at room temperature (21 °C). They can also be used to verify just the energy scale of a machine at -40° C, interchangeably with SRMs 2092 and 2096. An acceptable machine will produce an average value within 1.4 J or 5 % of the certified energy value, whichever is greater. Currently, specific requirements are not available to verify the performance of the force scale for a Charpy test machine.

SRMs 2216, 2218, and 2219 are intended for the verification of maximum force and absorbed energy values measured at room temperature using a small-scale Charpy impact machine, in accordance with the current standards ASTM E2248 or ISO 14556. Each SRM unit consists of a set of three KLST-type specimens needed to perform a single verification.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	2092	2093	2096	2097	2098	2112	2113	2197	2198	2216
Description	Low-Energy Charpy V-Notch Specimens (NIST-Verification, 8-mm Striker)	Low-Energy Charpy V-Notch Specimens (Self-Verification, 8-mm Striker)	High-Energy Charpy V-Notch Specimens (NIST-Verification, 8 mm-Striker)	High-Energy Charpy V-Notch Specimens (Self-Verification, 8-mm Striker)	Super-High-Energy Charpy V-Notch Specimens (NIST-Verification, 8-mm Striker)	Dynamic Impact Force Verification Specimens (Self-Verification, 8-mm Striker; 24 kN nominal)	Dynamic Impact Force Verification Specimens (Self-Verification, 8-mm Striker; 33 kN nominal)	Low-Energy Charpy V-Notch Specimens (Self-Verification, 2-mm Striker)	High-Energy Charpy V-Notch Specimens (Self-Verification, 2-mm Striker)	Miniaturized Low-Energy Charpy V-Notch KLST Specimens (Self-Verification)
Unit of Issue	(set)	(set)	(set)	(set)	(set)	(set)	(set)	(set)	(set)	(set)
					Typical Absorbed Energy Range					
(J)	13 to 20	13 to 20	90 to 140	90 to 140	175 to 240	97.5	15.3	14 to 22	97 to 150	1.59

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only

309.1 - Impact Standards: Charpy V-Notch Specimens

These SRMs are test specimens intended primarily for the verification of Charpy testing machines. The dimensions of these SRMs comply with the current ASTM Standard E23 and the current ISO 148-1 Standard.

SRMs 2092, 2096, and 2098 are NIST-Verification Charpy V-notch specimens that have a post-test evaluation service and proficiency test data available with them. SRMs 2092 and 2096 are to be tested at -40 °C; SRM 2098 is to be tested at room temperature (21 °C). These SRMs should be impact tested (broken) consectively in the same time frame (*i.e.*, not on separate days). A completed questionnaire and digital pictures of the broken samples should be then emailed to NIST Boulder for evaluation. An acceptable machine will produce an average value within 1.4 J or 5 % of the certified energy value, whichever is greater.

SRMs 2093 and 2097 are Self-Verification Charpy V-notch specimens that do not have any post-test services available with them. These SRMs provide a lower cost option for the Self-Service user. SRMs 2093 and 2097 are to be tested at -40 °C. These SRMs are not returned to NIST Boulder for evaluation.

SRMs 2112 and 2113 are NIST-Verification Charpy V-notch specimens that are certified for absorbed energy at -40 °C and room temperature and for maximum force at room temperature. These SRMs provide a means to verify the performance of both the energy and force scales of an instrumented

Charpy impact machine at room temperature (21 °C). They can also be used to verify just the energy scale of a machine at -40° C, interchangeably with SRMs 2092 and 2096. An acceptable machine will produce an average value within 1.4 J or 5 % of the certified energy value, whichever is greater. Currently, specific requirements are not available to verify the performance of the force scale for a Charpy test machine.

SRMs 2216, 2218, and 2219 are intended for the verification of maximum force and absorbed energy values measured at room temperature using a small-scale Charpy impact machine, in accordance with the current standards ASTM E2248 or ISO 14556. Each SRM unit consists of a set of three KLST-type specimens needed to perform a single verification.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

2218	2219
Miniaturized High-Energy Charpy V-Notch KLST Specimens (Self-Verification)	**Miniaturized Super-High Energy Charpy V-Notch KLST Specimens (Self-Verification)**
(set)	**(set)**
5.65	10.03

- Certified values are normal font
- Reference values are italicized
- Values in parentheses are for information only